

Key to the Species.

- A. Underparts grey.
- a*¹. Tail with black tip and no hoary ends to hairs.
 - a*². Back deep orange *Sc. caniceps* (winter).
 - b*². Back uniformly grizzled.
 - a*³. Sides of neck of same colour as the back *Sc. caniceps* (summer).
 - b*³. Sides of neck with patch of colour.
 - a*⁴. Patch on the neck deep chestnut. *Sc. epomophorus*.
 - b*⁴. Patch on the neck pale rufous *Sc. e. Davisoni*.
 - b*¹. Tail with black tip and hoary ends to the hairs *Sc. concolor*.
- B. Underparts buff or yellow.
- a*¹. Tail with black tip.
 - a*². Colour of underparts not bordered by a dark stripe on flanks *Sc. pygerythrus*.
 - b*². Colour of underparts bordered by a dark stripe on flanks *Sc. p. Phayrei*.
 - b*¹. Tail with no black tip *Sc. griseimanus*.

XXXVI.—*Descriptions of Seventeen new Genera of Ichneumonidæ from India and One from Australia.* By P. CAMERON.

IN this paper I have described a number of well-marked genera of Ichneumonidæ, mostly belonging to the Joppini and the Heresiarachini. Very little has been published upon the Joppini occurring in India, but in all probability they will prove to be quite as numerous there as in the Neotropical Zoological Region, which has hitherto been looked upon as the headquarters of the group. Two genera of Indian Joppini have been described by Dr. Kriechbaumer in Ent. Nachtr. xxiv. 1898, where he also revises the genera; and there is a further revision of them by Mr. W. H. Ashmead in Bull. U.S. Nat. Mus. xxiii. 1900. The Heresiarachini are easily known by their toothless mandibles. This tribe appears to be well represented in India, but no species has hitherto been recorded therefrom. The species are in the collection of Mr. G. A. J. Rothney.

GATHETUS, gen. nov.

Wings with an apical cloud. Areolet five-angled, narrowed at the top. Antennæ short, thickened and compressed beyond the middle. Cheeks swollen. Labrum hidden. Scutellum flat, the sides not margined, the apex incised in the

middle. Postscutellum rounded. Median segment obliquely depressed from the top to the postscutellum; there are three central areæ—a large central and one on either side of it at the top, these being somewhat rounded on the outer side; the spiracular area is defined and extends to the apex. Abdomen with seven segments, the basal five longitudinally striated; the apical segments smooth; the segments project at the apices on the sides beneath; the ventral fold is on the second and third segments.

In Kriechebaumer's classification of the "Joppinen" this genus is referable to the *Holojoppinæ* and comes nearest to the American *Microjoppa*, which differs from it in the areolet being four-sided, the nervures being united at the top, in the scutellum not being quite flat and not incised at the apex, and in the ventral fold being distinct. The antennæ in my genus are shorter, the head is not so much depressed between the eyes, the abdomen is longer compared with the thorax, and the areolet is not so oblique; the legs are stout. Characteristic is the strongly longitudinally striated back of the abdomen.

Gathetus melanocerus, sp. n.

Luteus; flagello antennarum abdominisque apice nigris; alis flavo-hyalinis, apice violaceo. ♂ et ♀.
Long. 16–17 mm.

Antennæ black, the scape rufous beneath, the apex fuscous; the scape closely punctured, thickly covered with short fuscous hair. Head luteous, the face paler, the inner orbits slightly yellowish; the face closely punctured, the clypeus punctured in the middle, its sides almost smooth; the inner orbits distinctly and sharply margined; the base of the mandibles yellowish, the teeth black. Thorax luteous; the middle of the mesonotum slightly darker; the pleuræ with a faint yellowish tinge on the lower side. Mesonotum closely punctured, thickly covered with short fuscous hair. Scutellum shining, slightly narrowed towards the apex, flat, covered with large moderately deep punctures; the postscutellum very smooth and shining, the space on either side of it strongly longitudinally striated. The base of the median segment in the middle slightly raised above the top of the postscutellum; the whole segment at the base separated from the mesonotum by a deep wide transverse depression. The base of the median segment in the middle smooth, impunctate, this smooth space being continued shortly down the middle on either side of the central depression; the rest of the segment coarsely, transversely, irregularly striolated; the areæ are not clearly

defined; the central space is bordered by keels; from the side of the smooth basal space a stout curved keel runs to join the apex of the prolongation of the smooth part. The spiracular area is separated from the pleuræ by a distinct keel. Propleuræ closely punctured, the apex in the middle stoutly striated; the lower part projects, is there smooth, but above the smooth projection it is roundly hollowed and stoutly perpendicularly striolated. The tubercles form an elongated, narrow, sharp projection under the tegulæ, and are longer than them, extending from the base to the apex of the pleuræ; the space immediately underneath them stoutly, slightly obliquely striated, all the striæ distinctly separated; the rest of the pleuræ with shallow punctures, except on the middle behind; the lower part behind immediately over the hind coxæ roughly irregularly striolated; the metapleuræ closely punctured, less strongly behind, separated from the sternum by a stout keel, the part immediately over the keel being crenulated. Legs coloured like the thorax, except that the apical two joints of the hinder tarsi are black. Petiole stoutly striated down the middle, the sides, especially at the apex, strongly punctured; the other segments except the last strongly, closely, longitudinally striolated. Gastroceli transverse, deep, smooth, except in front of the middle, where they are striolated.

DIMÆTHA, gen. nov.

Antennæ short, flattened and compressed beyond the middle. Labrum distinctly projecting. Scutellum flat, sloping downwards from the middle towards the apex, its sides stoutly keeled on the basal half. Median segment with one large central, one lateral, and the spiracular area clearly defined. Wings large, with an apical cloud; the areolet oblique, four-sided; the transverse cubital nervures united on the top. Abdomen with seven segments and with a ventral fold on the second, third, and fourth, the dorsal segments closely punctured; the sides of the segments not angled. The hinder femora reach to the apex of the third segment.

This genus belongs to the Hemijoppinæ, but does not fit well into either of the sections into which Kriechbaumer divides the group. In the male the antennæ are much longer and serrate. Comparing *Dimætha* with *Gathetus*, it may be readily distinguished by not having the abdominal segments longitudinally striated, by the petiole being longer, by the postpetiole being narrower and shorter than the narrowed basal portion, the abdominal segments do not project so much at the apices, the scutellum is not so flat, and the hinder tarsi are much longer compared with the tibiæ.

Dimetha tibialis, sp. n.

Lutea; antennis, abdominis apice late apiceque tibiaram posticarum nigris; alis flavo-hyalinis, apice violaceo-fumato. ♀.
Long. 20 mm.

Antennæ black, the scape yellow except above. Head luteous, the face and eye-orbits of a paler yellow tint, smooth and shining, the face and clypeus with some scattered punctures. Mandibles luteous, the base broadly pale yellow. Mesonotum closely and minutely punctured, the middle slightly raised. Scutellum strongly and deeply punctured, the sides stoutly keeled to shortly beyond the middle; the apex with a gradually rounded slope. Postscutellum smooth and shining, the space at its sides stoutly longitudinally striated. The base of the median segment closely punctured and obliquely depressed; in the middle at the top of the depression is a smooth and shining space, from which run a smooth and shining keel along the sides and two diverging ones down the centre, which is irregularly transversely reticulated; the sides are transversely striated. The upper part of the propleuræ is coarsely aciculated, the middle bears stout perpendicular keels, the apex stout longitudinal keels; the lower part is aciculated. Mesopleuræ obscurely punctured above, the lower part closely rugose, running into striæ behind. Metapleuræ closely rugosely punctured. Legs coloured like the body, with the apical third of the hinder tibiæ and the hinder tarsi (except the base of the hinder tarsi, which is obscure luteous) black. Wings yellowish hyaline, the apex from the apex of the areolet dark violaceous; the stigma and nervures are yellow. Abdomen coloured like the thorax, except the apical three segments, which are black, and a black transverse line on the base of the second and third segments, the black on the second segment being produced backwards between the gastrocœli. The basal three segments are closely punctured; the apex of the petiole and the base of the second and third segments striated. Gastrocœli smooth, bordered with stout striæ behind.

FACYDES, gen. nov.

Areolet five-angled, the nervures distinctly separated above; the apex of the wings with a fuscous cloud; the transverse median nerve distinctly received in front of the basal. Antennæ short, flattened, and compressed beyond the middle. Clypeus with a shallow curved incision on the apex; the labrum not projecting. Scutellum pyramidal, distinctly raised

above the level of the mesonotum. Median segment with one elongate central area. Legs short and stout, the hinder femora not extending beyond the apex of the third segment. The second and third abdominal segments are longitudinally striated; the ventral fold is distinct on the second, third, and fourth segments.

The depression between the median segment and the mesonotum is wide and deep; the base of the former is largely raised and has a rather steep slope; the transverse median nervure is not quite interstitial; the abdominal segments are distinctly angularly separated at their apices; the tarsi are spinose.

Facydes purpureo-maculatus, sp. n.

Luteus; antennis nigris, abdominis apice nigro-purpureo; alis flavo-hyalinis, apice violaceo. ♀.

Long. 14 mm.

Antennæ black, the scape luteous beneath. Head smooth and shining; the cheeks with scattered punctures; the eye-orbits and the face and clypeus lemon-yellow. The mesonotum is of a darker rufous colour than the rest of the thorax and is closely punctured. Scutellum pyramidal, the basal slope more abrupt and shorter; it is closely punctured and thickly covered with short black hair. Postscutellum smooth, shining, and glabrous. Median segment closely punctured, the base in the middle smooth and shining; on the apex are two central and a lateral bordering narrow keel. Propleuræ smooth and shining. The upper part of the mesopleuræ smooth, the middle and lower parts punctured, but not closely. The base of the metapleuræ slightly, the apical closely rugosely punctured. Legs coloured like the body; the coxæ slightly paler. Wings hyaline, with a slight but distinct yellow tint; the apex from the end of the stigma fuscous-violaceous. Abdomen luteous, the apical three segments black, variegated with purple; the apex of the petiole is stoutly longitudinally striated in the middle, the sides punctured; the second and third segments are longitudinally striated in the middle at the base. Gastrocæli smooth.

LEPTOJOPPA, gen. nov.

Antennæ short, thickened and compressed beyond the middle. Eyes large, parallel, reaching near to the base of the mandibles. Clypeus separated, the basal foveæ large, deep, its apex transverse. Mandibles bidentate. Occiput margined. The head obliquely narrowed behind the eyes.

Parapsidal furrows distinct at the base. Pronotum tuberculate near the base. Scutellum stoutly keeled on the basal half; the apical half with an oblique slope. Median segment with one central basal and two lateral areæ. Spiracles elongate, narrow, rounded at the base and apex. Legs short, slender; the base of the fore tibiæ incised; the claws simple. Areolet five-angled, narrowed at the top; the recurrent nervure is received shortly beyond the middle; the transverse median nervure is received in front of the transverse basal. Abdomen very long, slender, almost cylindrical, nearly three times as long as the head and thorax united; the apex of the petiole dilated; the large spiracles placed at its base; there is a distinct ventral fold on segments 2, 3, and 4, a less distinct one on 5 and 6; the sheaths of the ovipositor project; there are seven dorsal segments. The labrum is small and projects slightly.

This genus belongs to the *Oxyptigi*, as is shown by the presence of the ventral fold and by the pointed apex of the abdomen. It is easily distinguished from any of the known *Joppina* by the short dilated antennæ and by the very long, narrow, almost cylindrical abdomen, tuberculated pronotum, and keeled scutellum.

Leptojoppa erythrothorax, sp. n.

Capite nigro, albo-maculato; thorace, pedibus anterioribus, coxis trochanteribusque posticis rufis; antennis nigris, medio albo-annulato; abdomine ceruleo; alis fusco-hyalinis. ♀.
Long. 24 mm.

Antennæ thickened and compressed beyond the middle; the apex gradually and distinctly narrowed; the sides and lower part of the five or six joints beyond the middle white; the scape finely and not very distinctly punctured, sparsely covered with short hair; a white somewhat conical mark in the middle at the base. The face and clypeus, the inner orbits (narrow below, wider above) to near the hinder ocelli, a somewhat triangular mark touching the eyes shortly behind the ocelli, a large mark on the lower orbits, narrow above, broad below, and reaching near to the base of the ocelli and the palpi, yellow. Face and clypeus strongly, uniformly, but not very closely punctured. Mandibles to near the teeth closely and rather strongly punctured; the two teeth very large, the upper much larger and more sharply pointed than the lower, which diverges downwards. Thorax rufo-ferruginous, except for a small yellow mark on either side of the pronotum and a slightly larger and longer one under the

tegulæ. Mesonotum closely and rather strongly punctured throughout, its base in the middle transverse; the middle raised, the raised part becoming narrowed and less distinct towards the apex. Scutellum narrowed and depressed towards the apex, more strongly punctured than the mesonotum, and with the punctures more widely separated; its sides stoutly keeled; the depression at its base large, deep, smooth; the sides at the base slightly oblique. Postscutellum coarsely longitudinally striolated. Median segment closely, uniformly, but not very strongly rugosely punctured; the area rather irregular; the suprmedian elongate, wide, obliquely narrowed at the base; the apical part coffin-shaped, the apex narrowed; the outer area large, the basal the larger and transverse at the apex; the apex of the segment has a slightly oblique slope. Propleuræ closely punctured, the lower part at the apex strongly longitudinally striolated. The upper part of the mesopleuræ punctured at the base, the upper part under the wings smooth, forming in the centre a stout longitudinal keel; the lower part stoutly perpendicularly striated, the striæ posteriorly becoming curved; the apex crenulated. The metapleuræ closely rugosely punctured. The mesosternum is flat, closely punctured, furrowed down the side, the apex in the middle triangularly depressed. Legs covered with short white pubescence, the four anterior entirely, the hinder coxæ, trochanters and extreme base of the femora red, the hinder femora, tibiæ, and tarsi bluish black. Wings hyaline, with a slight but distinct fuscous tinge; areolet narrowed at the top, the recurrent nervure received in the centre. Abdomen more than twice the length of the head and thorax united, blue; the ventral segments white; the sides of the apical white on the lower side; the sheaths of the ovipositor black, closely pilose, as long as, if not longer than, the last segment. Petiole narrowed at the base, dilated at the apex; the extreme base rufous to near the apex, marked with scattered punctures; the apical part raised in the middle; the middle of the raised part finely reticulated, the apex with largish punctures; the sides above at the apex broadly depressed, irregularly striated; outside this depression it is marked with some large distinctly separated punctures; the other segments closely and uniformly punctured; the gastrocelli large, oblique, deep; the base blue, rugosely punctured; the apex smooth, dark brownish.

CRATOJOPPA, gen. nov.

Antennæ short, thickened, and dilated beyond the middle. Labrum hidden. Scutellum flat, its sides not margined.

Median segment areolated, the keels not very distinctly defined; there are two central areæ, the basal reaches to the middle and is contracted roundly and largely near the base. Areolet slightly oblique; the transverse cubital nervures are united above. The second and third abdominal segments are closely punctured and longitudinally striated at the base; the ventral keel is largely developed on the second and third segments; the seventh segment is largely developed all round.

The wings are hyaline; the head is large and broad and is well developed behind the eyes, which reach near to the base of the clypeus; they are margined on the inner side; the face is flat and is not separated from the middle of the clypeus; the latter is bounded above on the sides by an oblique furrow; the mandibles have a longish upper and a shorter stout under tooth, which is curved inwardly. Legs stout; the tarsi spinose; the fore tibiæ are narrowed and slightly incised at the base and thickly spined; the abdominal segments are not angled at the apex laterally, but broadly rounded.

The type of the genus is a stoutly built insect, with a large head and stout short antennæ. The legs are also stout and with large hind coxæ; the hinder trochanters reach to the apex of the third segment; the last segment above is more than one half the length of the penultimate. The dilated antennæ in the female (the only sex known) and the absence of regular areæ on the median segment would refer it to the *Joppina*, and, if anywhere, to the Hemijoppinæ Doryphoræ of Kriechbanmer. The distinguishing characteristics are the short, stout, dilated antennæ, the quite flat large scutellum, not keeled laterally, and the three central narrow areæ, not clearly separated, on the median segment. The median segment is large and has a gradually rounded slope; the spiracular area is bounded by two keels.

Cratojoppa robusta, sp. n.

Nigra; flagello antennarum late, facie, orbitis oculorum late, maculis late thoracis, lineisque abdominis, flavis; pedibus fulvis; coxis posticis, geniculis posticis apiceque tibiæ posticarum late nigris; alis hyalinis, nervis stigmatæque nigris. ♀.

Long. 14–15 mm.

Antennæ black, stout; the scape beneath and joints 9–20 white, beyond the middle compressed and dilated; the apex attenuated. The face, clypeus, labrum, the mandibles (except the teeth), the palpi, the orbits from the base of the antennæ to shortly above the middle on the outer side narrowly, and

the lower orbits on the outer side widely, yellow. Face strongly punctured all over, the clypeus with the punctures larger and more widely separated, and sparsely covered with long fuscous hair; the sides of the clypeus broadly rounded; the apex in the middle projecting into a stout blunt tooth. Thorax black; the edge of the pronotum from near the base to the tegulæ (the yellow narrowed in the middle), the tegulæ, two lines in the middle on the inner side of the middle lobe, the broad scutellar keels, the sides of the scutellum broadly, the apex more narrowly, the postscutellum, a large mark behind the metathoracic stigmas (extending on their outer side to their apices, on the inner not much beyond their base), the base in the middle, then continued down the outer sides of the posterior area, at the apex broadly dilated laterally, and at the base on the outer side continued backwards into the spiracular area, the prosternum, the base of the mesosternum, the mesopleuræ on the lower side, and the sides of the mesosternum (more broadly on the apical half and the apex of the metapleuræ), yellow. The base of the mesonotum closely punctured; the apex with the punctures larger and more widely separated; the parapsidal furrows are only indicated at the base. The scutellar depression is wide and deep; the scutellum flat, the black central part bearing large deep punctures, which are sparser at its base; the depression at its side and at the sides of the postscutellum stoutly striolated; the postscutellum smooth, glabrous, the sides at the base deeply depressed. The basal half of the median segment coarsely and deeply punctured; in the centre at the base is an hour-glass-shaped area, which is continued down the middle to the posterior median area; its sides are depressed in the centre at the base and transversely striated; the posterior median area is conical at the base, and is stoutly transversely striated throughout; the outer and the tooth-bearing area distinct, as is also the spiracular. The apex of the propleuræ coarsely punctured, the base finely obliquely striated, the middle smooth and shining. Mesopleuræ punctured, except in the middle behind, under the tubercles and at the apex crenulated. Metapleuræ coarsely punctured, the upper part and the apex of the spiracular area obliquely striated. The furrow in the middle of the mesosternum is wide and deep and is stoutly crenulated throughout. The four anterior legs are fulvous, the coxæ and trochanters pallid yellow; the hinder legs of a deeper red, the coxæ black, yellow at the apex above; the base of the basal joint of the trochanters, the apex of the femora broadly, the base of the tibiæ narrowly, and their apex more broadly than the femora, black; the tarsi

yellow, with a fulvous tinge. The areolet narrowed at the top; the cubital nervures almost united; the recurrent nervure is received in the middle; the transverse median nervure is received before the transverse basal. Petiole stout, shining, its base and the sides of the dilated part with scattered punctures; the dilated part with an elongated fovea at the base; the space behind the fovea and the space surrounding the spiracles finely striated; the second, third, and fourth segments closely punctured, the second strongly longitudinally striated between the gastrocœli, which are large, deep, smooth, and with an oblique slope at the base and apex. The yellow line on the petiole is narrowed in the centre, on the second only very slightly, on the third and fourth acutely narrowed; on the apical two not perceptibly narrowed; the second and third segments broadly in the middle, the fourth and fifth broadly at the apex, and the apical segments are entirely yellow.

[To be continued.]

XXXVII.—*Descriptions of some new African Arachnida.*

By R. I. POCKOCK.

Order SCORPIONES.

Parabuthus cristatus, sp. n.

Parabuthus brevimanus, Pocock, P. Z. S. 1890, p. 125 (nec *Buthus brevimanus*, Thorell).

♀.—Allied to *P. brevimanus*, Thorell, in the complete absence of distinct crests on the sides and under surface of the fourth caudal segment. Caudal segments 1–3 with eight keels, the median lateral weak on segments 2–3 and only granular posteriorly; four inferior keels on segment 1 entirely smooth, on 2 and 3 marked with very coarse tubercular granules, which increase in strength posteriorly, the lateral keels converging posteriorly; on the 3rd segment the terminal tubercles of the four keels form a broad, quadrilobate, U-shaped crest; the anterior edge of the lower side of the 4th segment also raised into a distinct lobate crest. Upper-side of segments 1–2 abruptly elevated anteriorly, the anterior third rising nearly vertically, the posterior two thirds horizontal, excavated and shagreened.

Chelæ as in *P. brevimanus* apparently, except that there are